

Micro Commercial Components



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20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

S9013-G
S9013-H
S9013-I

NPN Silicon Transistors

Features

- TO-92 Plastic-Encapsulate Transistors
- Capable of 0.625Watts(Tamb=25°C) of Power Dissipation.
- Collector-current 0.5A
- Collector-base Voltage 40V
- Operating and storage junction temperature range: -55°C to +150°C
- Marking Code: S9013
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisure Sensitivity Level 1

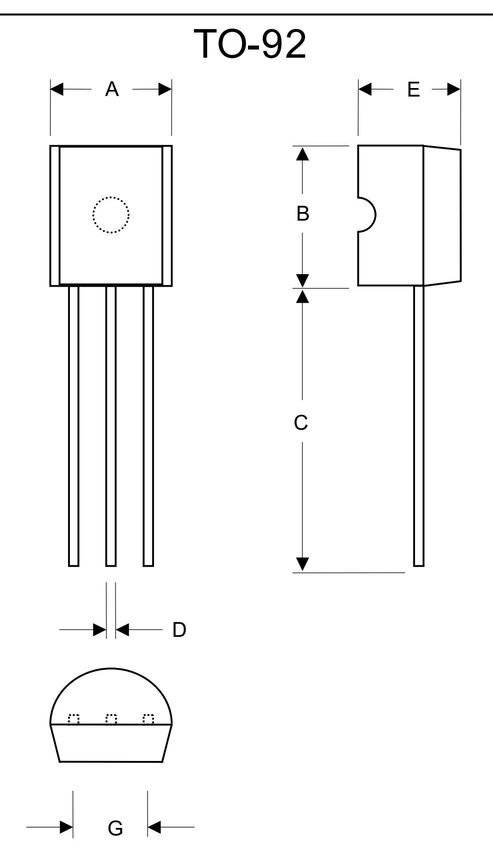
C B E

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (I_C=100uAdc, I_E=0)	40	---	Vdc
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage (I_C=0.1mAdc, I_B=0)	25	---	Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (I_E=100uAdc, I_C=0)	5.0	---	Vdc
I_{CBO}	Collector Cutoff Current (V_{CB}=40Vdc, I_E=0)	---	0.1	uAdc
I_{CEO}	Collector Cutoff Current (V_{CE}=20Vdc, I_B=0)	---	0.1	uAdc
I_{EBO}	Emitter Cutoff Current (V_{EB}=5.0Vdc, I_C=0)	---	0.1	uAdc
ON CHARACTERISTICS				
$h_{FE(1)}$	DC Current Gain (I_C=50mAdc, V_{CE}=1.0Vdc)	64	400	---
$h_{FE(2)}$	DC Current Gain (I_C=500mAdc, V_{CE}=1.0Vdc)	40	---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (I_C=500mAdc, I_B=50mAdc)	---	0.6	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (I_C=500mAdc, I_B=50mAdc)	---	1.2	Vdc
V_{EB}	Base- Emitter Voltage (I_E=100mAdc)	---	1.4	Vdc
SMALL-SIGNAL CHARACTERISTICS				
f_T	Transistor Frequency (I_C=20mAdc, V_{CE}=6.0Vdc, f=30MHz)	150	---	MHz

CLASSIFICATION OF $h_{FE(1)}$

Rank	G	H	I
Range	112-166	144-202	190-300



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.170	.190	4.33	4.83	
B	.170	.190	4.30	4.83	
C	.550	.590	13.97	14.97	
D	.010	.020	0.36	0.56	
E	.130	.160	3.30	3.96	
G	.096	.104	2.44	2.64	



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Ordering Information :

Device	Packing
Part Number-AP	Ammo Packing: 20Kpcs/Carton
Part Number-BP	Bulk: 100Kpcs/Carton

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